



# QUANTIC

The UK Quantum Technology Hub  
in Quantum Enhanced Imaging

## Single Photon Imaging : Superconducting Nanowire Arrays

**One of Einstein's seminal contributions to modern science was the insight that light, at a fundamental level, is comprised of quantized packets of energy known as photons. A century later, the ability to detect low energy infrared photons holds the key to a host of applications, spanning secure communications, atmospheric remote sensing and medical diagnostics.**

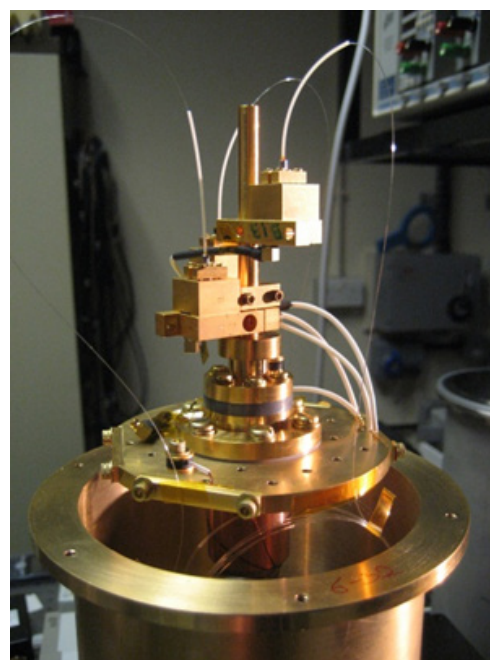
QuantIC is developing some of the world's most advanced infrared photon counting technologies. Professor Robert Hadfield is leading the development of superconducting nanowire single photon detectors (SNSPDs), using the world class nanofabrication capability of the James Watt Nanofabrication Centre at the University of Glasgow. Through QuantIC his team are scaling up from single pixel SNSPD devices to large area arrays, and developing next generation miniaturized cryogenic platforms.

SNSPDs offer key advantages over conventional single photon avalanche diodes and photomultipliers:

- Single photon sensitivity from visible to mid infrared wavelengths
- Near unity efficiency
- Low dark count rates (Hz)
- Excellent timing resolution (20 ps)
- Short reset times enabling GHz count rates

A recent Market Survey confirmed the tremendous potential of this technology in a variety of growing application areas, including:

- Light detection and ranging (LIDAR)
- Remote sensing
- Astronomy
- Free space communications
- Integrated circuit testing
- Medical diagnostics




QuantIC has a £4M Partnership Resource Fund to support industry led projects to develop our new technology and facilitate its translation to market commercialisation.

For more information , please contact:

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